four years (1869–1903), making the ninth successive year of low floods. The mean rainfall, and the oscillation of the rain-belt with the apparent motion of the sun, are very clearly shown by coloured maps, drawn for each month.

The report of the Falmouth Observatory committee of the Royal Cornwall Polytechnic Society for the year 1905 (one of the principal observatories subsidised by the Meteorological Office) shows that a record reading of the barometer for that part of the British Islands occurred on January 28, viz. 31·097 inches (corrected and reduced to sea-level). The next highest reading at Falmouth during the last thirty years was 30·981 inches, on January 18, 1882. Another interesting point is the mean temperature of the sea-surface, taken one mile outside the harbour, viz. 53°·3, being 2°·3 above the mean temperature of the air. The mean monthly sea-temperature was only below that of the air in June, July, and August. Much attention is given to magnetic observations, and the instruments are not affected by electric tramways. During a display of aurora borealis on the night of November 15, an easterly movement in the declination took place at 8h. 53m. p.m. which in twelve minutes reduced it about 33′, while in the subsequent twenty minutes the declination increased about 41′, which was 8′ west of its position before the movement occurred.

The *Jahrbuch* of the Norwegian Meteorological Institute for 1905 contains hourly observations for Christiania, with tri-daily readings and summaries for other stations. The results are given according to the international scheme, as before, the only change being that mid-European time has been introduced (one hour earlier than Greenwich), so that the observations at telegraphic reporting stations, which were previously taken by Christiania time, are now made seventeen minutes earlier than in previous years, while at the ordinary stations the time of taking observations has not been altered. Accompanying the *Jahrbuch* is part xiv. of the valuable series of climatological tables for Norway, containing the average monthly amount of cloud for the various directions of wind ("cloud wind-roses"); at most of the stations the averages are for a period of twenty years (1876–95).

The trigonometrical branch office at Dehra Dun has published a valuable series of daily rainfall observations for each of the thirty-six years 1868–1903. The mean annual fall is 84·72 inches, of which 65 per cent. falls in July and August. The maximum yearly amount was 122·47 inches, in 1894, and the minimum 41·69 inches, in 1877. The greatest fall in one day was 12·47 inches, on August 10, 1896. From a summary of the highest and lowest temperatures in the shade, for the same years, we observe that the mean of the annual extremes was 104°·3, the absolute maximum being 108°·4, on May 19, 1892 (108°·3 on June 5, 1890), and the minimum 31°·8, on January 13, 1874, the next lowest being 33°·9, on February 5, 1876.

COLOURING OF GUEREZA MONKEYS.

IN vol. ii. of the Proceedings of the Zoological Society of the current year, Mr. Lydekker contributes a paper on colour-evolution in the black or black and white tropical African monkeys of the genus Colobus commonly known as guerezas. Starting with a wholly black monkey, like the West African *C. satanas*, in which, although there is a fringe of long hair round the face, the body is comparatively short-haired and the tail not tufted, the author shows how a gradation can be traced through species like *C. palliatus* and *C. sharpei* of East Central Africa, in which tufts of long white hair (larger in the second than in the first of the two species named) make their appearance on the sides of the face and shoulders, as well as on the terminal third of the tail, to the Abyssinian *C. guereza*, in which the white shoulder-tufts extend backwards to form a mantle on each side of the body, and unite on the lower part of the back. The culmination of this type is formed by the white-tailed guereza (*C. caudatus*) of the Kilimanjaro district, in which the pendent white mantle is still longer, and the tail, which is wholly white except for a small length at the root, is clothed with long pendent hair; the cheek- and throat-tufts, however, have been lost, so that the head is short-haired, with the face and throat white.

The West African white-thighed guereza (*C. vellerosus*) appears to exhibit a kind of retrograde development in these respects, the body having lost the mantle of long white hair and the tail its white "flag," while the white of the perineal patch has spread on to the hinder and outer sides of the thighs. In this case we find practical reversion to the type of the black guereza, with the exception that the band on the forehead, the sides of the face and throat, the thighs, and almost the whole tail have become white, while the long hair has disappeared from the face. In the opinion of the author the colouring and special development of the long hair in the white-tailed guereza form a protective modification, but the purport of the colouring of the intermediate forms between this and the black guereza is left undecided.

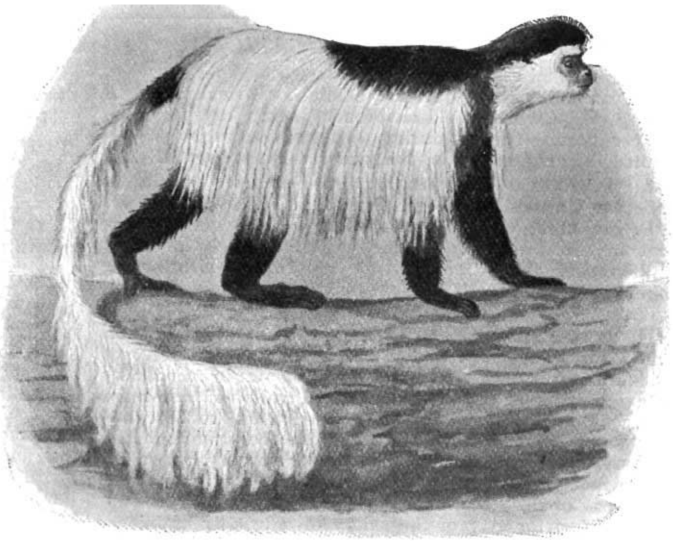

FIG. 1.—White-tailed Guereza (*Cololus caudatus*). From the Proceedings of th Zoological Society.

ELECTRICITY IN MINES.

A VERY great development has taken place during the past two years in electrical machinery and apparatus for working colliery plant. Manufacturers seem at last to have realised that machines and accessories must be adapted and made to suit the conditions existing in collieries, and that the collieries cannot be adapted to suit their standard machines. Consequently, in the colliery exhibition which has just taken place, the result of experience in colliery work was clearly put before us in entirely new designs of motors and switchgear specially adapted for this work.

The details of colliery requirements have been most carefully studied and gone into, and the designs prove the tremendous development that has taken place. Whereas a few years ago contractors simply attached their standard machine to a haulage-gear or coal-cutter, and supplied the ordinary switch-gear as for everyday use, to-day we find that it is the general rule for motors to be designed and built for the particular work for which they are intended, and to be made part and parcel of the machine they have to drive. The same applies to the switch-gear, and a large supply of different forms of specially enclosed switches for

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use in very fiery mines proves how thoroughly the manufacturers have interested themselves in the matter.

The automatic and electrical devices for regulating and signalling in connection with electrically driven winding engines were quite the most interesting and valuable introduction in this year's exhibition, and the fact that by far the greater number of coal-cutters and drills which were exhibited were fitted with electric motors should go far to prove that electricity is fighting its way successfully against the older established methods of colliery procedure.

Other arrangements of colliery machinery showing the adaptability of electric motors were well represented by motor-driven pumps, fans, hoists, heading machines, and elevators, and among interesting signs of the times were the electrically driven air compressors.

This development in colliery work is quite in keeping with the expansion of the use of electricity for power purposes which is taking place at the present time. The many power schemes now in hand or being brought before Parliament also show that, although it has been a long time coming, electricity as a motive power for general use may now be said to have "arrived."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE annual meeting of the Midland Agricultural and Dairy College will be held on Monday next, July 30, when the certificates gained during last session will be distributed, and the report on the year's work presented.

MR. P. FRASER has been appointed lecturer in mathematics at University College, Bristol, in succession to Mr. S. B. McLaren, who has resigned to take up an appointment in the University of Birmingham. The University of Liverpool has conferred the degree of Doctor of Engineering on Mr. J. Morrow, lecturer in engineering in University College, Bristol.

DR. JAMES STEWART, of Rickmansworth, who died on June 2 last, left more than 25,000*l.* to the University of Melbourne, Victoria, to found and endow in perpetuity three scholarships, each of an annual value of not more than 50*l.*, and tenable for two or three years, to be called the "Stewart Scholarships," one to be awarded for anatomy, one for medicine, and one for surgery. In addition to this, more than 3000*l.* is left to the Ballarat School of Mines for a "Stewart Fund" to be applied to the augmentation for ever of the salary of a teacher of mineralogy, and about 1500*l.* to the Ballarat Mechanics' Institute for replenishing the library.

THE new regulations of the Board of Education for the training of teachers and for the examination of students in training colleges have been published. No very substantial alterations have been made in the present issue. It is satisfactory to find that no single detailed syllabus of elementary science is included in the schemes of work regulating the instruction in the compulsory subjects of the examination to be conducted by the Board in 1908. After a consideration of the needs of the students and of the facilities which the training college offers for science teaching, the authorities are to draw up a scheme of instruction in science and to submit it to the approval of the Board. This instruction will in the main be tested by inspection, and the students will be expected to be able to carry out experiments selected from that portion of the approved syllabus which has been worked through up to the date of the inspector's visit, or to perform such experiments of similar character as the inspector may consider suitable. Encouragement is to be given to students proposing to teach in country schools to take up what is called "rural science," which includes nature-study and the broad principles of agriculture. The whole tendency of these regulations is to discountenance a mere text-book acquaintance with the facts of science; the Board is to be congratulated upon its recognition of the value to teachers of a practical training in the methods of science.

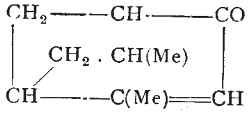
ON Wednesday, July 18, the new buildings of the South-Eastern Agricultural College, Wye, were opened by Lady Carrington in the unavoidable absence of the Minister of Agriculture. At the same time the diplomas, certificates, and prizes were presented by her to the students before a large assembly of persons interested in agriculture, including Lord Ashcombe, Mr. Laurence Hardy, M.P., and Mrs. Laurence Hardy, Mr. Henniker-Heaton, M.P., Mr. Marsham (chairman Kent County Council), Major Craigie, C.B. (Board of Agriculture), the Poet Laureate, Lady Theobald Butler, Dr. Clowes, and others. The new buildings have increased the size of the college by about one-third its present extent. The additions include a veterinary and bacteriological laboratory, a large new drawing school, a new zoological research laboratory, a chemical research room connected with a greenhouse, new offices and students' common room, and a large detached gymnasium, the latter and the drawing school both anonymous gifts. The additions have permitted the enlargement of the biological laboratory and one of the lecture rooms to nearly double their former size, and the formation of a mycological research room. Electric light has been installed throughout. The college may now be said to be the most completely equipped agricultural institution in the country. The principal, in addressing the meeting, and also Mr. Laurence Hardy, in seconding the vote of thanks to Lady Carrington, both spoke of the importance of research work and urged strongly that national financial aid should be given to the college, which has opportunities for such work as cannot be found elsewhere.

HIGHER education will benefit greatly by the handsome bequests detailed in the will of the late Mr. Alfred Beit. The college of technology (including mining and metallurgy) in connection with the University of London receives 50,000*l.* and 5000 preferred shares of 2*l.* 10*s.* each in De Beers Consolidated Mines (Limited). The sum of 200,000*l.* is left to the University of Johannesburg to be applied in or towards building and equipping university buildings on the site of the property recently given by Mr. Beit to Johannesburg (including the construction of a tramway connecting the property with Johannesburg), the income of such 200,000*l.* to be applied meanwhile for educational projects as the Board of Education at Johannesburg may determine; but if at the expiration of ten years the 200,000*l.* shall not have been applied in such building and equipment, then the legacy is to lapse. 200,000*l.* is to be distributed within two years after Mr. Beit's death by a board of trustees, of whom the present Bishop of Mashonaland is to be one, for educational, public, and other charitable purposes in Rhodesia. Mr. Beit also bequeathed 25,000*l.* to the Institute of Medical Sciences Fund, University of London, and 25,000*l.* to the Rhodes University, Grahamstown, Cape Colony; 20,000*l.* to his firm of Eckstein and Co., of Johannesburg, to be applied for educational, public, and other charitable purposes in the Transvaal Colony; 15,000*l.* to his firm at Kimberley, to be applied for educational, public, and other charitable purposes in or near Kimberley; and 15,000*l.* to Dr. Jameson, Prime Minister of Cape Colony, and Sir Lewis L. Michell, to be applied for educational, public, and other charitable purposes in Cape Colony (excluding Kimberley).

SOCIETIES AND ACADEMIES.

LONDON.

Chemical Society, July 5.—Prof. R. Meldola, F.R.S., president, in the chair.—Saponarin, a new glucoside coloured blue with iodine: G. **Barger.** This substance has been isolated from *Saponaria officinalis.* It crystallises in microscopic needles and is hydrolysed by acids yielding glucose, vitexin, and a colouring matter, apparently isomeric with vitexin, for which the name saponaretin is suggested.—The constitution of umbellulone: F. **Tutin.** Umbellulone occurs in the essential oil of *Umbellularia Californica*, and has the formula $C_{10}H_{14}O$. Its reactions indicate that it has the constitution



—The action of ethyl iodide and of propyl iodide on the disodium derivative of diacetylacetone: A. W. **Bain.**—A

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